Index

29 CFR 1910.1450, 11-3	best efficiency point
access tube	pumps, 6-5
neutron probe, 7-9	best management practice
accident	(BMP), 9-17
investigation, 11-1	Best Management Practices
accidents, 11-1	(BMPs), 4-8
acidic, 1-9	wellhead protection, 4-8
adsorption, 2-15	biochemical oxygen demand
aerobic	(BOD), 1-6
conditions, 1-6	bleed-off, 9-24
AgriMet, 7-11, 7-12	blood-borne disease, 11-21
agronomic rate, 2-32	$BOD_5, _{1-6}$
agronomy, 2-24	boron, 2-27
air-purifying respirators, 11-11	breaking tension, 7-7
air-supplying respirators, 11-11	bump cap, 11-4
alfalfa, 9-10	cable-tow traveler
algae growth, 3-5	sprinkler, 6-19
alkaline, 1-9	cadmium, 1-8, 2-25
alum, 1-10, 2-21	calcium, 1-2, 1-7, 1-10, 2-15, 2-16, 2-17,
aluminum oxides, 2-3	2-26, 2-27, 2-28, 4-2, 4-3, 4-4
amino acids, 2-22	capillary action, 3-6
ammonia, 1-7, 2-22, 4-2, 4-5	capillary fringe, 3-6
ammonium, 1-7, 2-15, 2-22, 2-26	cation exchange capacity
anaerobic	(CEC), 2-14
conditions, 1-6	cations, 1-10, 2-15, 2-16, 2-17, 2-26
Annual Report, 12-4	cavitation
aquifers, 3-6	pump, 6-9
arsenic, 1-8, 2-25	centibars, 7-7
ash, 8-2	chain-of-custody tape, 8-14
available water holding capacity	characteristics
usage, 7-12	wastewater, 1-1
available water-holding capacity	charged surfaces
(AWC), 2-20	coilloids, 2-15
backflow prevention, 12-7	checkbook method, 7-10
background sample, 8-6	chelation, 2-21
barley, 9-10	chemical hygiene plan, 11-3
bars, 7-7	chloramines, 4-2
bearings	chloride, 2-27
pumps, 6-7	chlorination, 4-1
Bermuda	chlorine
grass, 2-32	demand, 4-2

	1: 1.4 : 11.00
measurement, 4-2	diphtheria, 11-22
ritual, 4-2	discharge rate, 7-19
chlorine contact time, 5-2	disinfection, 4-1
chlorosis, 2-30	dissolved oxygen
cholera, 1-5	(DO), 1-6
class pipe, 6-14	distribution
classes	of wastewater, 9-23
effluent, 1-10	domestic wastewater, 1-1
clay mineralogy, 2-15	dosing volume, 6-4
clay minerals, 1-10	draft permit and staff analysis, 12-3
clogging mat, 9-5	drainage, 2-12
cold weather	duckweed, 5-4
operations, 9-25	duplicate samples, 8-5
colloids, 2-15, 2-16, 2-17, 2-21, 2-23, 2-	dye tests
26, 2-27	short-circuiting, 5-7
color	dysentery, 1-5
soil, 2-11	effective precipitation, 7-18
wastewater, 1-2	Effective Root Zone, 7-12
compaction	effluent, 1-5
soil, 2-10	classes, 1-10
complexation, 2-21	elimination, 2-22
composite sample, 8-5	emergency action plan, 9-33
confined space, 11-13	Emergency Action Plan, 9-32
constituent loading rates, 1-13	end use
construction	crops, 9-14
monitoring well, 3-10	Environmental Protection Agency
consumption, 2-22	EPA, xvii
control sample, 8-6	equipment blank, 8-9
conversion	ESP
sodic soils, 9-10	levels, 9-9
copper, 1-8, 2-15, 2-24, 2-25, 2-26, 2-27,	estrictive layer, 9-4
2-28, 2-29, 6-12	eutrophication, 3-5
coppice, 9-15	evapotranspiration, 3-2
cotton, 9-10	exchangeable cations, 2-16
cover crops	exchangeable sodium percentage
benefits of, 9-11	ESP, 9-9
crop management, 8-3, 9-11	expansive clays, 2-15
crop selection, 9-13	fecal wastes, 1-5
deficiency, 2-30	ferric chloride, 1-10
denitrification, 2-22	field blank, 8-9
depression, 2-13	field capacity, 2-18
depth	filterable residue, 1-4
soil, 2-11	fish kills, 3-5
design point	floodplain, 2-13
pumps, 6-5	flushing
design pump capacity, 6-3	salt removal, 9-9
design pump delivery rate, 6-3	fodder, 1-11, 1-12
and a family a family and a family a family and a family a family a family and a family	

footslope, 2-13	Idaho Board of Drinking Water and
freeboard, 5-1	Wastewater Professionals, 12-16
gloves	Idaho Bureau of Occupational Licenses
chemical labels, 11-6	IBOL, 12-2
goals	Idaho Division of Building Safety, 11-1
WLAP, xvii	IDAPA 58.01.17, 1-15, 2-32, 3-13, 4-9,
grab sample, 8-5	5-7, 6-24, 7-24, 9-36, 10-16, 11-23,
grasses	12-1, 12-2, 12-18
cool season, 9-14	IDAPA 58.01.17, 12-1
warm season, 9-14	wastewater land application permit
gravitational water, 2-18	rules, 1-10
Grazing Management Plan, 9-31	immobilization, 2-22
ground water, 3-5	immunizations, 11-22
quality, 12-12	incident reporting, 11-2
quality standards, 12-12	industrial wastewater, 1-1
ground water mounding, 3-8	infiltration, 2-17
Ground Water Quality Rule	injuries, 11-1
IDAPA 58.01.11, 12-1	skin, 11-9
growing season, 1-12	ion exchange, 2-21
(GS), 7-18, <i>10-8</i>	ions, 2-15
gun cart, 6-19	iron, 1-2, 1-7, 2-3, 2-11, 2-15, 2-24, 2-26,
gypsum blocks, 7-8	2-27, 2-28, 2-29, 6-12, 6-13, 6-14
hand-off-automatic	irrigation rate, 7-19
(HOA), 6-9	irrigation system efficiency, 7-18
hard hats, 11-4	Irrigation Water Requirement
Hazard Communication Standard, 11-3	(IWR), 1-12, <i>10-8</i>
head	definition of, 7-18
pump, 6-2	Kevlar®, 11-7
Health and Safety Program	Laboratory Standard, 11-3
requirements, 11-1, 11-2	land limiting constituent
heavy metal, 2-25	(LLC), 7-16
hepatitis, 1-5, 4-1, 11-21	land limiting nutrient, 8-2
horizon	landscape position, 2-13
restrictive, 2-11	lane spacing, 6-20
horsepower, 6-2	leaching
Human Immunodeficiency Virus	definition, xvii
(HIV), 11-21	lead, 1-8, 2-25, 2-29, 6-8
humus	licensure, 12-1
soil organic matter, 2-11	limestone, 2-27
hydraulic conductivity	limiting factors, 2-25
permeability, 2-20	liners
Hydraulic Loading Rate, 10-4	lagoons, 5-2
hydraulic overload, 9-24	loam, 2-6, 2-19
hydrologic cycle, 3-1	lockout, 11-15
hydrology, 3-1	logbook, 9-32
hydrometer, 2-7	low rate pumping, 8-10
•	macronutrients, 2-24

macropores, 2-7 magnesium, 1-7, 2-15, 2-24, 2-26, 2-27, 2-28, 6-13	Natural Resource Conservation Service (NRCS), 2-20 Net Irrigation Requirement
maintenance requirements	(IR), 10-8
crops, 9-14	neutron probe, 7-9
major modifications	nickel, 1-8, 2-25
permit, 12-6	nitrate, 1-7, 1-13, 2-22, 2-26, 2-27
management	nitrite, 1-7, 2-22
of system components, 9-25	nitrogen, xix, xxv, 1-7, 1-8, 1-11, 1-13,
manganese, 1-8, 1-10, 2-24, 2-26, 2-27,	2-11, 2-15, 2-18, 2-22, 2-24, 2-26, 2-
2-28, 2-29	27, 2-28, 4-2, 10-1
master horizons, 2-3	nitrogen cycle, 1-7
material safety data sheets	nonfilterable residue, 1-4
(MSDS), 11-3	non-growing season, 1-12
maximum hydraulic loading rate, 7-18	(NGS), 10-9
mercaptans, 1-2	hydraulic loading rate, 10-9
mercury, 1-8, 2-25	notice of completeness, 12-3
microbial activity	notice of incompleteness, 12-3
wastewater, 1-3	nutrient, 1-6
micronutrients, 2-24 micropores, 2-8	nutrient deficiency, 8-2 nutrient management
micropores, 2-8 microtopography, 2-14	best management practices, 9-18
milliequivalents	nutrient management plan, 2-31
(meq), 10-11	nutrient requirements
mineralization, 2-22	crops, 9-13
minor modifications	nutrient toxicity, 8-2
permit, 12-6	O&M Manual, 9-30
modification	Occupational Exposure to Hazardous
of permit, 12-6	Chemicals in Laboratories Standard,
moisture blocks. See gypsum blocks	11-3
molybdenum, 1-8, 2-24, 2-25, 2-27, 2-28,	Occupational Safety and Health
2-29	Administration
monitoring	(OSHA), 11-1
ground water, 3-9	odor
monitoring wells	wastewater, 1-2
locating, 3-9	Odor Management Plan, 9-31 oil and grease
requirements, 12-13 most recent mature leaf	effects of, 9-10
MRML, 8-3	operations and maintenance, 9-1
mottling, 2-12	Operations and Maintenance
mucks, 2-3	(O&M), 9-30
Munsell system	Operations and Maintenance (O&M)
color determination, 2-12	(O&M), 12-2
National Cooperative Soil Survey, 2-3	Operations and Maintenance Manual, 9-2
National Pollutant Discharge	
Elimination System	operator requirements
(NPDES), 12-2	Class A, 12-8

organic matter, 2-11	Plan of Operation Checklist, 9-30
organic nitrogen, 1-7	plant available water content, 2-17
oven dry, 2-18	(PAW), 2-19
overseed, 9-14	plant nutrients
oxygen levels	insufficiency, 9-12
depletion of due to eutrophication, 3-5	plant tissue sampling, 8-2
ozone	plant tolerance
disinfection, 4-1	saline and sodic soils, 9-8
passing score	point sources, 9-17
WLAP operator examination, 12-16	polio, 1-5
pathogens, 1-5	pollutants
peats, 2-3	surface water, 3-5
peds	ponding, 3-5
soil structure, 2-9	pore space, 2-1
penalties	portable pump
permit violations, 12-7	sampling with, 8-11
perch, 2-8	potassium, 1-7, 1-10, 2-15, 2-24, 2-26, 2-
perched water table, 3-7	27, 2-29, 2-32
permanent wilting point, 2-19	precipitation, 3-1
permeability, 2-17	preliminary decision, 12-3
permit	pressure, 6-2
requirements, 12-5	pressure pipe, 6-14
permit application process, 12-2	priority nutrient, 8-2
permit-required confined space, 11-13	problems
persistent organic chemicals, 1-9	soil related, 9-2
personal protective equipment	protective headgear
(PPE), 11-2	care of, 11-5
required, 11-4	proteins, 2-22
pH, 1-9, 2-14	pump curve, 6-4
Phene cell, 7-9	pump delivery rate efficiency, 6-4
phosphorus, xix, xxv, 1-7, 1-8, 1-13, 1-	pumps
14, 2-11, 2-15, 2-24, 2-27, 2-28, 2-29,	centrifugal, 6-5
2-32, 3-5, 10-1	control panels, 6-9
photosynthesis, 2-25	diaphragm, 6-6
pipe	peristaltic, 6-6
aluminum, 6-13	reciprocating, 6-6
asbestos, 6-13	submersible, 6-6
cast iron, 6-12	turbine, 6-6
cleanouts, 6-14	purging
concrete, 6-12	well, 8-10
ductile cast iron, 6-13	putrification, 3-5
PVC, 6-13	quartz, 2-3
schedules, 6-13	recordkeeping, 9-32
steel, 6-12	injuries and illnesses, 11-2
piping	respirators
systems, 6-12	types, 11-11
Plan of Operation. See O&M Manual	Responsible Charge

(RC), 12-14	sodium, xx, 1-10, 2-14, 2-17, 4-2, 4-3
Responsible Charge Operator, 12-14	sodium adsorption ratio
restrictive horizon, 2-11	(SAR), 1-10, 9-8, 10-11
ridgetop, 2-13	soil
riprap, 5-1	profiles, 2-2
rules	soil compaction, 2-10
wastewater, 12-1	soil erosion, 3-4
Rules of the Board of Drinking Water	soil horizons, 2-2
and Wastewater Professionals	soil series, 2-4
IDAPA 24.05.01, 12-1	soil structure, 2-9
runoff, 3-4	soil testing, 8-1
rye, 9-10	solids
safety awareness, 11-1	wastewater, 1-3
safety orientation, 11-2	soluble salts, 1-10
salt removal	sorghum, 9-10
flushing, 9-9	sources
salts	domestic, 1-1
effect on plant growth, 9-7	industrial, 1-1
salt-tolerance	split sample, 8-5
grasses and legumes, 9-10	sprinklers, 6-16, 6-17
sample aliquot, 8-6	standards
sample collection	ground water quality, 12-12
kits, 8-8	stuffing boxes
sample size	pumps, 6-7
leaves, 8-3	Substitute Responsible Charge Operator,
sampling, 8-1	12-14
special handling procedures, 8-13	subsurface drainage, 3-8
SAR	sufficiency, 2-30
sodium adsorption ratio, 2-14	suitability
upper level, 9-8	ground water, 12-12
values, 9-8	sulfur, 1-2, 1-7, 2-11, 2-15, 2-24, 2-27, 2-
saturated zone, 3-5	29
selenium, 1-8, 2-25	suspended solids
self-contained breathing apparatus	(SS), 1-4
(SCBA), 11-11	sweet clover, 9-10
shingellosis, 1-5	tagout, 11-15
short-circuiting, 5-2	temperature
shoulder slope, 2-13	wastewater, 1-3
shrink/swell clays, 2-15	tensiometer, 7-7
sieve, 2-7	tetanus, 11-21, 11-22
skin injuries, 11-9	Textural Triangle, 2-5
slope	thrust block, 6-14
steepness, 2-13	tillage, 9-6
sodic, 2-17	time domain reflectometer, 7-10
sodic soils	topography, 2-13
conversion, 9-10	total application depth, 7-19
effects on plants, 9-7	total coliform bacteria, 1-5

Total Dissolved Solids	gate, 6-15
ground water, 12-13	globe, 6-16
Total Kjeldahl nitrogen	plug, 6-15
TKN, 1-7	pressure relief, 6-16
total phosphate, 1-8	solenoid, 6-16
toxicity, 2-30	vectors, 3-5, 5-3, 7-13, 11-23
training	viruses
WLAP operator, 12-16	adsorption, 2-21
transpiration, 3-2	volatilization, 2-22
treatment requirements	waivers
Class A, 12-8	permit requirements, 12-7
trees	Waste Solids Management Plan, 9-31
as receiver crop, 9-15	wastes
trip blank, 8-9	inorganic, 1-2
troubleshooting, 9-21	organic, 1-2
turbidity, 3-4	radioactive, 1-2
types	thermal, 1-2
waste, 1-2	wastewater land application
typhoid, 1-5	WLAP, xvii
Typical Crop Uptake, 2-32, 10-15	water hammer, 6-9
ultraviolet radiation	Water Quality Standards and Wastewater
disinfection, 4-1	Treatment Requirements
United States Department of Agriculture	IDAPA 58.01.02, 12-1
(USDA), 2-5	water table, 3-5
unsaturated zone, 3-5	water-tolerant
upland, 2-13	grasses, 9-14
valve, 6-15	well
air relief, 6-16	purging, 8-10
bleeder, 6-16	wetness, 2-12
butterfly, 6-15	zinc, 1-8, 2-15, 2-24, 2-25, 2-26, 2-27, 2-
check, 6-16	28, 2-29
0110011, 0 10	-0,/